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EXAMINER

ARTMAN, THOMAS R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EDWARD S. BOYDEN, GLENN B. FOSTER,
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EDWARD K.Y. JUNG, ERIC C. LEUTHARDT,
ROBERT W. LORD, NATHAN P. MYHRVOLD,
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CHARLES WHITMER, LOWELL L. WOOD, JR.,
and VICTORIA Y.H. WOOD

Appeal 2011-007668
Application 12/011,626
Technology Center 2800

Before MAHSHID D. SAADAT, ROBERT E. NAPPI, and
LARRY J. HUME, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the rejection of claims 1 through 44. An oral hearing was held October 10, 2013.

We affirm.

INVENTION

The invention is directed to a method for visualizing, imaging or providing information of a portion of an individual via a Compton Scattered X-ray technique. *See* abstract of Appellants' Specification. Claim 1 is representative of the invention and reproduced below:

1. A method, comprising:

Compton Scattered X-ray visualizing, imaging, or providing information at least partially through an at least some matter of an at least a portion of an individual to an at least one prescribed visualizing, imaging, or information providing depth based at least partially on a density differentiation between the at least some matter of the at least the portion of the individual and at least some dissimilar matter of the at least the portion of the individual, wherein the at least one prescribed visualizing, imaging, or information providing depth is at least partially dependent on an energy level of at least one applied X-ray being applied to the at least some matter of the at least the portion of the individual and the at least some dissimilar matter of the at least the portion of the individual, and thereupon the at least one applied X-ray undergoes Compton Scattering within the at least some matter of the at least the portion of the individual in a manner that density differentiates the at least some matter of the at least the portion of the individual with respect to the at least some dissimilar matter of the at least the portion of the individual.

REJECTIONS AT ISSUE

The Examiner has rejected claims 1 through 44 under 35 U.S.C. § 112, second paragraph as being indefinite. Answer 4-5.¹

The Examiner has provisionally rejected claims 1, 3, 10, 11, 19 through 23, 25, 32, 33, and 41 through 44 based upon non-statutory obviousness double patenting over the claims of copending application 12/011,627. Answer 6.

The Examiner has rejected claims 1 through 9, 13 through 31, and 35 through 44 under 35 U.S.C. § 102(b) as anticipated by Harding (U.S. 4,850,002; Jul. 18, 1989). Answer 7-8.

The Examiner has rejected claims 1, 12, 23, and 34 under 35 U.S.C. § 102(e) as anticipated by Arsenault (U.S. 7,203,276 B2; Apr. 2007). Answer 9.

The Examiner has rejected claims 10, 11, 32, and 33 under 35 U.S.C. § 103(a) as unpatentable over Harding and Rasche (U.S. 6,865,248 B1; Mar. 8, 2005). Answer 9-10.

¹ Throughout this opinion we refer to the Examiner's Answer mailed on January 20, 2011.

Rejection under 35 U.S.C. § 112

ISSUES

Appellants argue on pages 16 through 28 of the Appeal Brief and page 6 of the Reply Brief that the Examiner's rejection under 35 U.S.C. § 112 is in error.² These arguments present us with the issues:

- a) With respect to claims 1 through 44, did the Examiner err in finding that the recitation of “visualizing, imaging, or providing information” renders the claims indefinite?
- b) With respect to claims 2 and 24, did the Examiner err in finding that the recitation of “avoiding at least partially disturbing” renders the claims indefinite?
- c) With respect to claims 6 and 28, did the Examiner err in finding that the recitation of “a tool or device that is at least partially operationally associated” renders the claims indefinite?
- d) With respect to claims 7 and 9, did the Examiner err in finding that the recitation of “a route or potential movement” renders the claims indefinite?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' contentions that the Examiner has erred. Further, we have reviewed the Examiner's response to Appellants' arguments. We agree with Appellants'

² Throughout this opinion we refer to Appellants' Appeal Brief filed on November 15, 2010 and Reply Brief dated March 21, 2011.

conclusions with respect to issue a) and c) above; however we disagree with Appellants' conclusions with respect to issues b) and d).

Issue a)

The Examiner states:

The most common indefinite phrase is: "visualizing, imaging or information providing" and "visualizing, imaging or providing information" and variations of this phrase that have the word "depth" at the end. It is cumbersome and causes uncertainty. The "or" causes confusion because it is unclear what is being listed in the alternative, and, therefore, what is in fact required by the claims. It is further unclear what is being "provided" in each claim.

Answer 4. We agree with the Examiner that this phrase is cumbersome and when interpreted in light of Appellants' Specification, the three terms are used as names to identify the process to identify and present information from a Compton Scattered X-ray, i.e. they describe roughly same thing. We consider the term "providing information" to be the broadest of the three terms and to encompass both visualizing and imaging. Nonetheless, recitation of these three names for the process in the alternative does not render the claim ambiguous. Thus, we do not consider the use of the term "provided" to be unclear as stated by the Examiner,³ rather it is merely part of the name of the process "providing information" and not a method step of providing. Accordingly, we will not sustain the Examiner's rejection of claims 1 and 24 under 35 U.S.C. § 112, second paragraph.

³ We note that claims 1 and 24 do not recite "provided" as asserted by the Examiner on page 4 of the Answer, but rather the claim recites the term "providing."

Issue b)

Appellants' arguments directed to this issue cite to portions of the Specification as providing support for the limitation directed to "avoiding at least partially disturbing" and assert that when interpreted in light of the Specification the limitation is clear and broad. Brief 21-23. The Examiner finds the recitation of such a method step is ambiguous as there is no recitation of what is doing the "avoiding." Answer 4, 11, and 12. We concur with the Examiner and sustain the Examiner's rejection of claims 2 and 24 under 35 U.S.C. § 112, second paragraph.

Issue c)

The Examiner finds that the recitation "detecting a location ... based at least partially on a movement of at least a portion of a tool or device that is at least partially operationally associated " is indefinite, as the claim does not require a tool or control of a tool's movement. Answer 4 and 12. Appellants argue that this recitation is broad, but when interpreted in light of the Specification is clear. We concur with Appellants and, accordingly, we will not sustain the Examiner's rejection of claims 6 and 28 under 35 U.S.C. § 112, second paragraph.

Issue d)

Appellants' arguments cite to portions of the Specification as providing support for the limitation directed to a "route or potential movement" and assert that when interpreted in light of the Specification the limitation is clear and broad. Brief 21-23. The Examiner finds that the Specification identifies the route or potential movement is for invasive tools to navigate. Answer 12. However, as the Examiner identifies, claims 7 and 29 do not recite such tools and, as such, the claims are ambiguous as they do

not recite what the route or movement applies to. Answer 4 and 12. We concur with the Examiner and sustain the Examiner's rejection of claims 7 and 29 under 35 U.S.C. § 112, second paragraph.

With respect to claims 3 through 5, 8 through 22, 25 through 27, and 30 through 44, the Examiner states that the claims are rejected based upon their dependencies and being in narrative form. As the Examiner has not identified specific ambiguities in these claims, we will not sustain the Examiner's rejection of claims 3 through 5, 8 through 22, 25 through 27, and 30 through 44, for the same reasons discussed with respect to claims 1 and 23.

Provisional rejection based upon non-statutory obviousness double patenting

Appellants argue on pages 29 and 30 of the Appeal Brief that the Examiner's rejection based upon ground of nonstatutory obviousness double patenting is in error. We decline to reach the issues presented by Appellants' arguments directed to this provisional rejection. The rejection is provisional, accordingly, the issues are not ripe for decision, and we dismiss the appeal of this rejection.

Rejection under 35 U.S.C. § 102(b) as anticipated by Harding

ISSUES

Appellants argue on pages 31 and 40 of the Appeal Brief and pages 8 through 12 of the Reply Brief that the Examiner's rejection under 35 U.S.C. § 102(b) as anticipated by Harding is in error. These arguments present us with the issues:

- e) Did the Examiner err in finding that Harding teaches the prescribed “visualizing ... depth is at least partially dependent on an energy level of ... applied X-ray”?
- f) With respect to claims 5 and 27, did the Examiner err in finding that Harding teaches altering the location or angle at which the X-ray is applied based at least in part on the detecting the location of at least some dissimilar matter?
- g) With respect to claims 7 and 29, did the Examiner err in finding that Harding teaches selecting a potential route through a portion of the individual?

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellants’ contentions that the Examiner has erred. Further, we have reviewed the Examiner’s response to Appellants’ arguments. We disagree with Appellants’ conclusions with respect to issues e) through g).

The Examiner has provided a comprehensive response to issues e) through g). Specifically, the Examiner states the claim is open-ended and does not preclude depth being dependent upon other factors. Further, the Examiner finds the energy of the applied X-ray must be sufficient to penetrate the object of interest and to cause Compton scattering. Answer 14-15. That is, the Examiner has found that visualization of the Compton X-ray scattering will not occur for depths beyond the X-ray penetration and thus the depth visualized is at least partially dependent upon the energy level of the X-ray. These findings by the Examiner are supported by a

preponderance of evidence and we concur with the Examiner's findings, except as to the ambiguity of representative claims 1 and 5

With respect to claims 7 and 29, as discussed above we concur with the Examiner's finding that these claims are ambiguous and sustain the Examiner's rejection under 35 U.S.C. § 112. Accordingly, to consider the Examiner's anticipation rejection of claims 7 and 29 would require speculation as to the scope of the claim. Our reviewing court has said that it is wrong to rely upon speculative assumptions as to the meaning of claims when considering a prior art rejection. *In re Steele* 305 F.2d 859, 862 (CCPA 1962). Thus, we do not sustain the Examiner's anticipation rejection of claims 7 and 29.

For the above reasons, we sustain the Examiner's rejection of claims 1 through 6, 8, 9, 13 through 28, 30, 31, and 35 through 44 under 35 U.S.C. § 102 (b) as anticipated by Harding, but we will not sustain the Examiner's rejection of claims 7 and 29 under 35 U.S.C. § 102(b) as anticipated by Harding.

Rejection under 35 U.S.C. § 102(e) as anticipated by Arsenault

ISSUE

Appellants argue on pages 40 and 44 of the Appeal Brief and pages 12 through 14 of the Reply Brief that the Examiner's rejection under 35 U.S.C. § 102(e) as anticipated by Arsenault is in error. These arguments present us with the issue:

- h) Did the Examiner err in finding that Arsenault teaches the prescribed "visualizing ... depth is at least partially dependent on an energy level of [the] applied X-ray"?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' contentions that the Examiner has erred. Further, we have reviewed the Examiner's response to Appellants' arguments. We disagree with Appellants' conclusion with respect to issue h). The Examiner's response has provided a comprehensive explanation of how Arsenault teaches the disputed limitation. The Examiner's rationale is similar to that applied with respect to Harding. Answer 14. We concur with the Examiner's findings as they are supported by a preponderance of evidence. Accordingly, we sustain the Examiner's rejection of claims 1, 12, 23, and 34 under 35 U.S.C. § 102(e) as anticipated by Arsenault.

Rejection under 35 U.S.C. § 103(a)

ISSUE

Appellants argue on pages 40 through 51 of the Appeal Brief and pages 15 and 16 of the Reply Brief that the Examiner's rejection under 35 U.S.C. § 103(a) as unpatentable over Harding, and Rasche is in error. These arguments present us with the issue:

- i) Did the Examiner err in finding that Harding and Rasche teaches the prescribed "visualizing ... depth is performed a rate sufficient to substantially capture a physical motion"?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' contentions that the Examiner has erred. Further, we have reviewed the Examiner's response to Appellants' arguments. We disagree with

Appellants' conclusion with respect to issue i). The Examiner's response has provided a comprehensive explanation of how the combination of Harding and Rasche teaches the disputed limitation. Answer 17. Further, representative claim 10 merely requires performing visualization at a rate to substantially capture a physical motion that is consistent with an individual-based physiological process, which does not distinguish over the low motion point of the image as the Examiner finds Rasche teaches. We concur with the Examiner's findings as they are supported by a preponderance of evidence. Accordingly, we sustain the Examiner's rejection of claims 10, 11, 32, and 33 under 35 U.S.C. § 103(a).

DECISION

We will not sustain:

- a) The Examiner's rejection of claims 1, 3 through 6, 8 through 23, 25 through 28, and 30 through 44 under 35 U.S.C. § 112, second paragraph.
- b) The Examiner's rejection of claims 7 and 29 under 35 U.S.C. § 102(b) as anticipated by Harding.

We sustain:

- a) The Examiner's rejection of claims 2, 7, 24, and 29 under 35 U.S.C. § 112, second paragraph.
- b) The Examiner's rejection claims 1 through 6, 8, 9, 13 through 28, 30, 31, and 35 through 44 under 35 U.S.C. § 102(b) as anticipated by Harding.

- c) The Examiner's rejection 1, 12, 23, and 34 under 35 U.S.C. § 102(e) as anticipated by Arsenault.
- d) The Examiner's rejection claims 10, 11, 32, and 33 under 35 U.S.C. § 103(a) as unpatentable over Harding and Rasche

The decision of the Examiner to reject claims 1 through 44 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

ELD